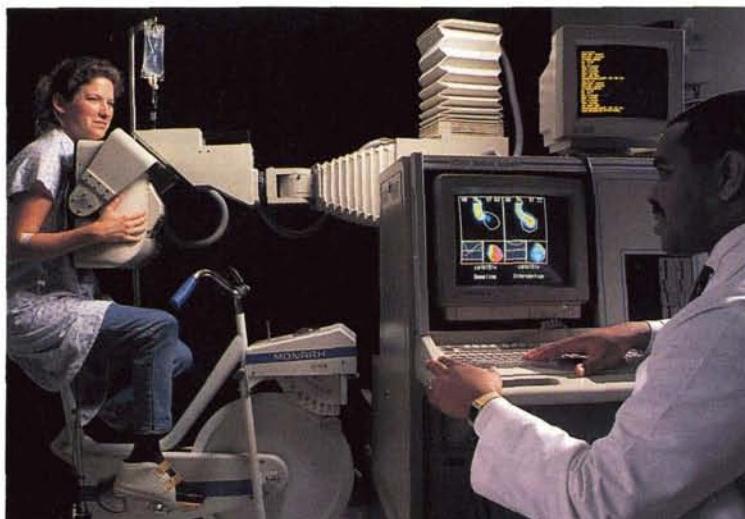




Heart Imaging System

Below, a heart patient rides an exercise bicycle to increase cardiac function while a medical technician uses a special camera to make images of the heart. The camera is an advanced technology MultiWire Gamma Camera (MWGC) used in nuclear medicine to image heart conditions six times faster than conventional devices.

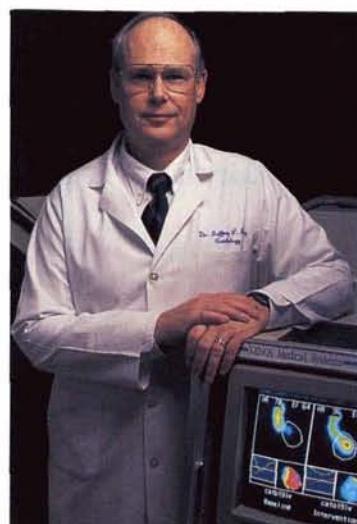
ASTRONAUT MONITOR-
ING TECHNOLOGY
IS USED IN AN
ADVANCED HEART
IMAGING SYSTEM



The MWGC is marketed by Xenos Medical Systems, Houston, Texas. One of the key elements of the system, a generator for the radioactive source injected into the patient, is supplied to Xenos by Proportional Technologies Inc., Houston, Texas, a company formed by Dr. Jeffrey L. Lacy (right), assistant professor of medicine at Baylor College of Medicine, Houston, to develop a commercially viable process that would

enable use of the new radio-pharmaceutical Tantalum-178 (Ta-178) in the camera system. The camera is based on technology developed by Dr. Lacy when he was a NASA biomedical researcher at Johnson Space Center (JSC); the commercial product evolved from technology that originated in a JSC project for a device to test astronauts' heart function in

MWGC. Because Ta-178 is an extremely short-lived isotope, the body is subjected to it for a brief nine-minute period, where other commonly used substances remain in the body for six to 72 hours. Thus the radiation dose is reduced 20 to 200 times and the technique can be used more frequently on adults. Ta-178 also permits use of the MWGC on pediatric



microgravity. Both the camera and the generator developments were partially funded by NASA.

The camera offers a number of features that distinguish it from conventional nuclear medicine cameras, including portability, high resolution and exceptional imaging speed. Most important is the use of Ta-178 as the radioactive source; Ta-178 can only be optimally imaged with the

patients, who are rarely studied with conventional isotopes because of the high radiation dosage. The MultiWire Gamma Camera is being marketed in Europe and the U.S. •